

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number  
**WO 2005/094906 A1**

(51) International Patent Classification<sup>7</sup>: **A61L 2/08**

(21) International Application Number:  
**PCT/US2005/009500**

(22) International Filing Date: **22 March 2005 (22.03.2005)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
**60/556,463** **25 March 2004 (25.03.2004)** **US**

(71) Applicant (for all designated States except US): **WHITTEN LABS., INC.** [US/US]; 31 Holton Street, Winchester, MA 01890 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MUKADDAM, Waheed** [US/US]; 72 Pleasant Street, Cambridge, MA 02139 (US). **THOMPSON, Allan, R.** [US/US]; 31 Holton Street, Winchester, MA 01890 (US). **MOORES, Charles, W.** [US/US]; 4 Deer Run, Wayland, MA 01778 (US).

(74) Agent: **SILVERSTEIN, David**; Andover-IP-Law, 44 Park Street, Suite 300, Andover, MA 01810 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

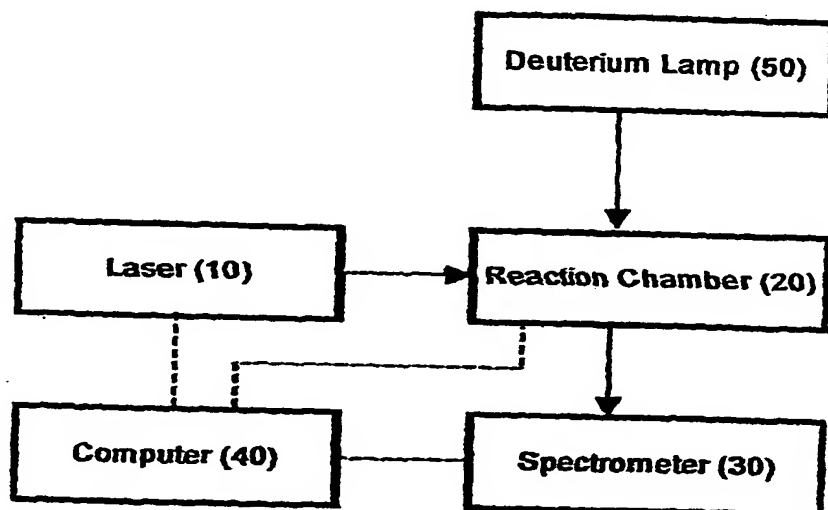
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ULTRAVIOLET LASER SYSTEM FOR DECOMPOSING CHEMICAL POLLUTANTS**



(57) Abstract: Apparatus and methods are disclosed for using an ultraviolet laser system to decompose selected chemical substances in water. More particularly, this invention provides methods and apparatus whereby various environmental pollutants in water are rapidly decomposed to very low concentrations, consistent with environmental discharge regulations, use requirements, and/or applicable health standards, by means of exposure to ultraviolet laser irradiation (10, 20), either with or without one or more catalysts and/or other chemical additives to facilitate or enhance the decomposition process.